

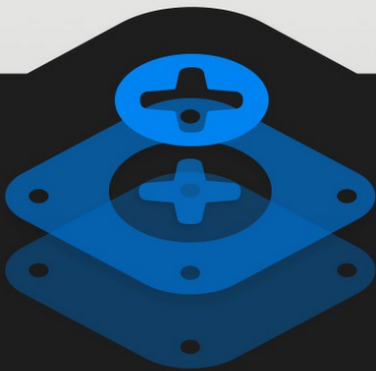


iPod Touch 6th Generation Teardown

Teardown of the sixth generation iPod Touch on July 16, 2015.

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iPod Touch 6th Gen



TEARDOWN

INTRODUCTION

Apple has literally been calling their iPod Touch 6th Generation "the best iPod touch yet." While they *are* giving their music box some of the iPhone's newest duds, only teardown will tell if this iPod is up to repairability snuff. Join us for some sweet disassembly, and some spicy X-ray action.

As always, keep in *touch* (get it, haha) with us by following iFixit on [Facebook](#), [Twitter](#), and [Instagram](#).

[video: <https://www.youtube.com/watch?v=Zw7MK31uFzM>]



TOOLS:

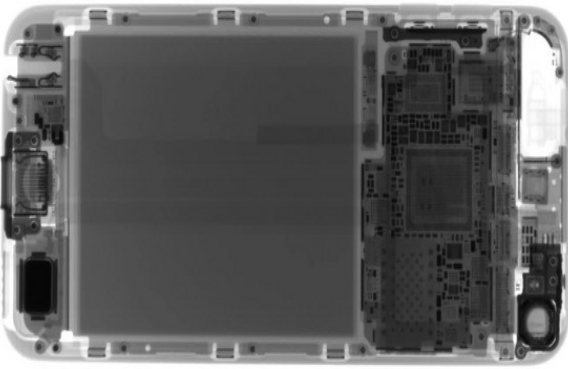
- [iOpener](#) (1)
 - [Phillips #000 Screwdriver](#) (1)
 - [Tweezers](#) (1)
 - [Spudger](#) (1)
 - [iSclack](#) (1)
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Step 1 — iPod Touch 6th Generation Teardown



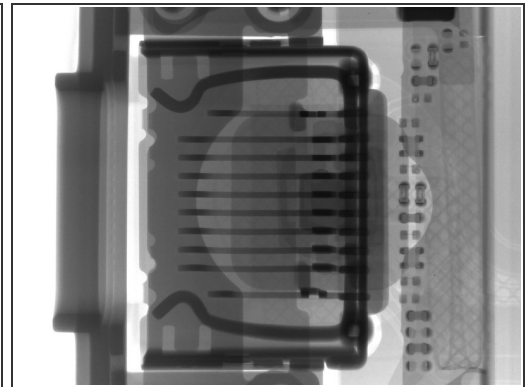
- With the same A8 processor and M8 coprocessor as the iPhone 6, it's hard not to get excited about the next-generation iPod Touch. Let's check specs:
 - 4-inch 1136 x 640 pixels (326 ppi) Multi-Touch IPS Retina display
 - 802.11a/b/g/n/ac Wi-Fi + Bluetooth 4.1 wireless technology (a whole .1 better than the 5th gen!)
 - Six-axis gyro + accelerometer
 - 8 MP, 1080p iSight camera with $f/2.4$ aperture and 1.2 MP, 720p HD Facetime camera with $f/2.2$ aperture
 - Shiny new model number: A1574

Step 2



- Being that the iPod Touch hasn't seen a full-blown update since 2012, we'd like to see what we're up against.
- Fortunately, we brought friends. With superpowers.
 - ⓘ Thanks, [Creative Electron!](#)
- Cry havoc and let fly the X-rays.

Step 3



- This new Touch now comes in gold, in addition to blue, pink, [\(Product\)Red](#), silver, and space gray.
- The bottom of the device contains no surprises with a now-familiar Lightning port, headphone jack, and speaker grille.
- Unlike recent iPhones, this Touch lacks a Touch ID sensor. Although it sacrifices Apple Pay, this is good news for repairability since Touch ID buttons are [paired to their corresponding processor](#).
- On the other side, the *inside*, we catch a glimpse of the home button and Lightning connector.
 - ⓘ The little curved prongs help your Lightning connector snap into place, and stay there.

Step 4



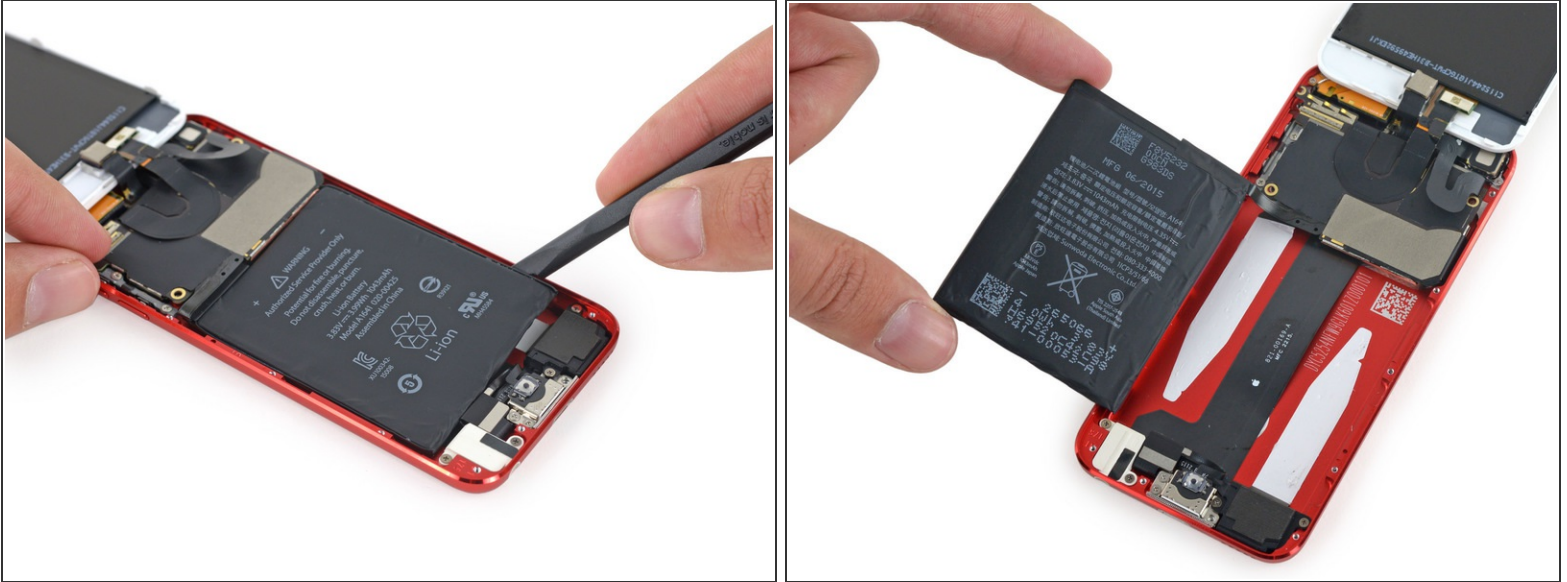
- Heat. [iSlack](#). Repeat—this digitizer/LCD panel is no match for our opening procedure.
 - ❗ The adhesive on this display seems tougher than [last time](#), but maybe we're just rusty after a year without an iPod refresh.
- With the display assembly out of the way, we're one step closer to the innards.

Step 5



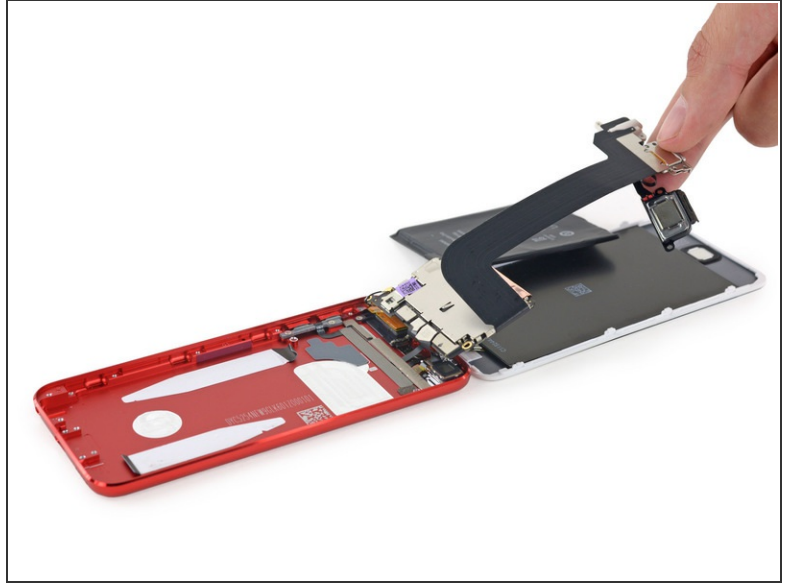
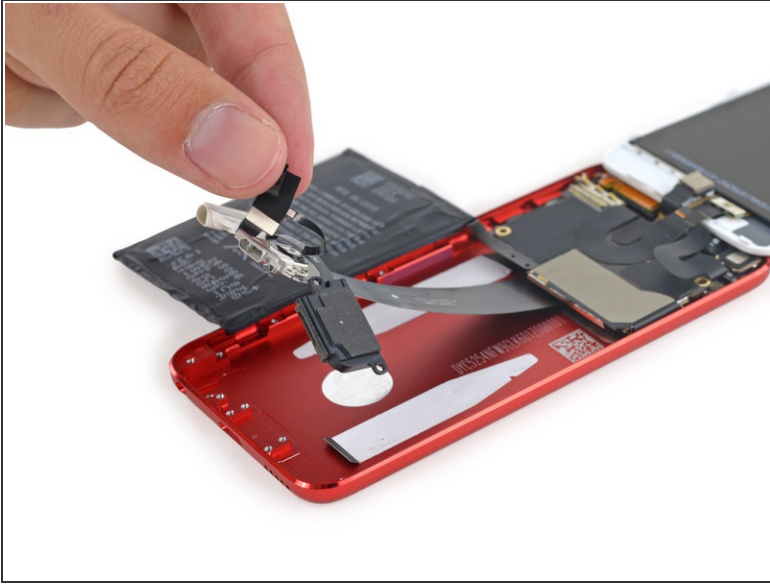
- We're eager to delve deeper into this new Touch, so we grab a screwdriver and set to work on extracting the EMI shield.
- Lifting the shield, we get a glimpse of [familiar territory](#). So far things look pretty darn similar to the 2012 vintage.
- ① We won't get our hopes up, but maybe changes made with the processor bump include separating a few components off the [soldered-together mess](#) of the 5th gen.

Step 6



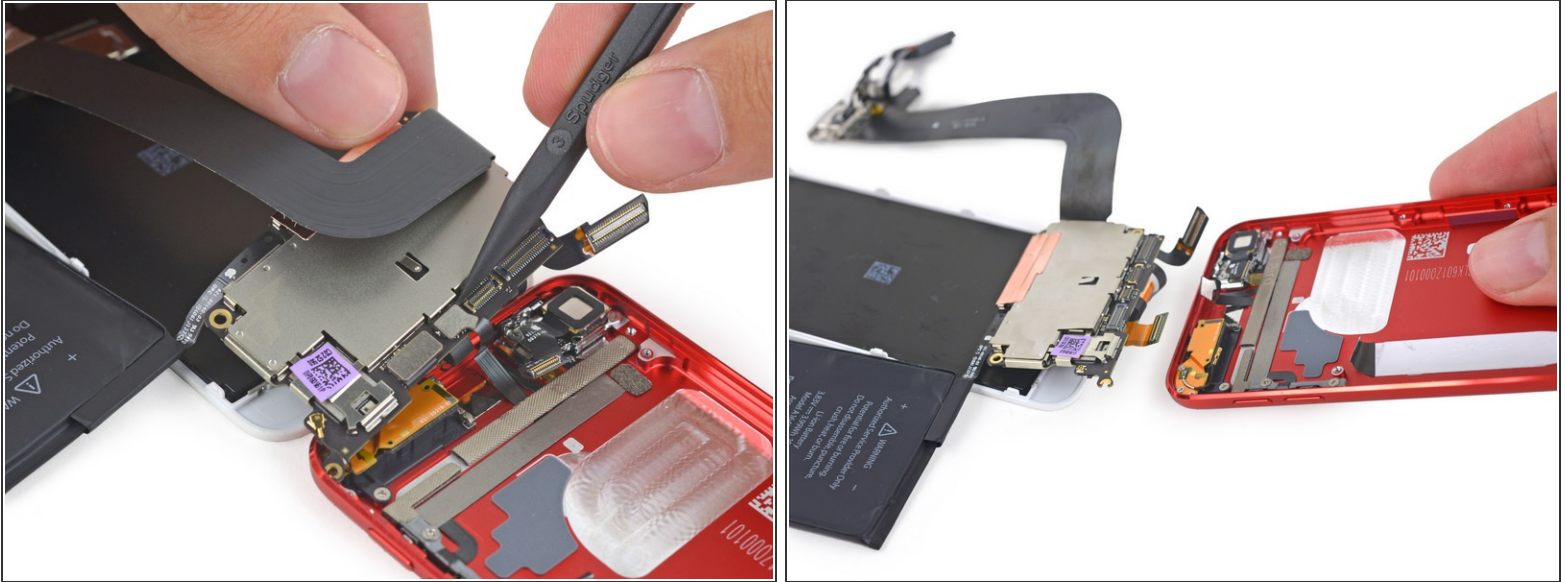
- We've been down this road before, and we're pretty confident in our [technique for getting the battery out](#). Unless of course, something has changed...
- ⓘ And something has! Looks like the new Touch has peel-out adhesive tabs securing the battery, an update to battery-securing tech we saw in the iPhone 5s. (Although we're scratching our heads about how to peel out a tab that's under the logic board).
- This Touch totes a 3.83 V, 3.99 Wh battery with a rating of 1043 mAh, as opposed to the 3.7 V, 3.8 Wh, 1030 mAh rated battery [found in the 5th Generation Touch](#).
- ⓘ Even with the Touch's advertised performance increases over the previous generation, Apple claims that the battery in this new iPod should supply up to 40 hours of ~~music~~ music, or up to 8 hours of video playback.

Step 7



- After the battery comes the lower assembly, home to the Lightning connector, speaker, microphone, headphone jack, and home button switch. Say that five times fast.
- In lieu of that [wiggly yellow flex cable](#), a new, straight ribbon cable connects the lower assembly to the underside of the logic board.
- ❗ Despite the new cable, Apple has yet to come to their senses and stop soldering this assembly directly to the logic board. Nuts!

Step 8



- A little bit of careful spudgering goes a long way.
- We pop off these connectors and are free to separate the two assemblies—the rear case assembly, and the "everything else" assembly.
- Leftover in the rear case:
 - Antenna assembly
 - Battery adhesive (oops)
 - Snarled volume button/power button/rear flash/microphone cable assembly

Step 9



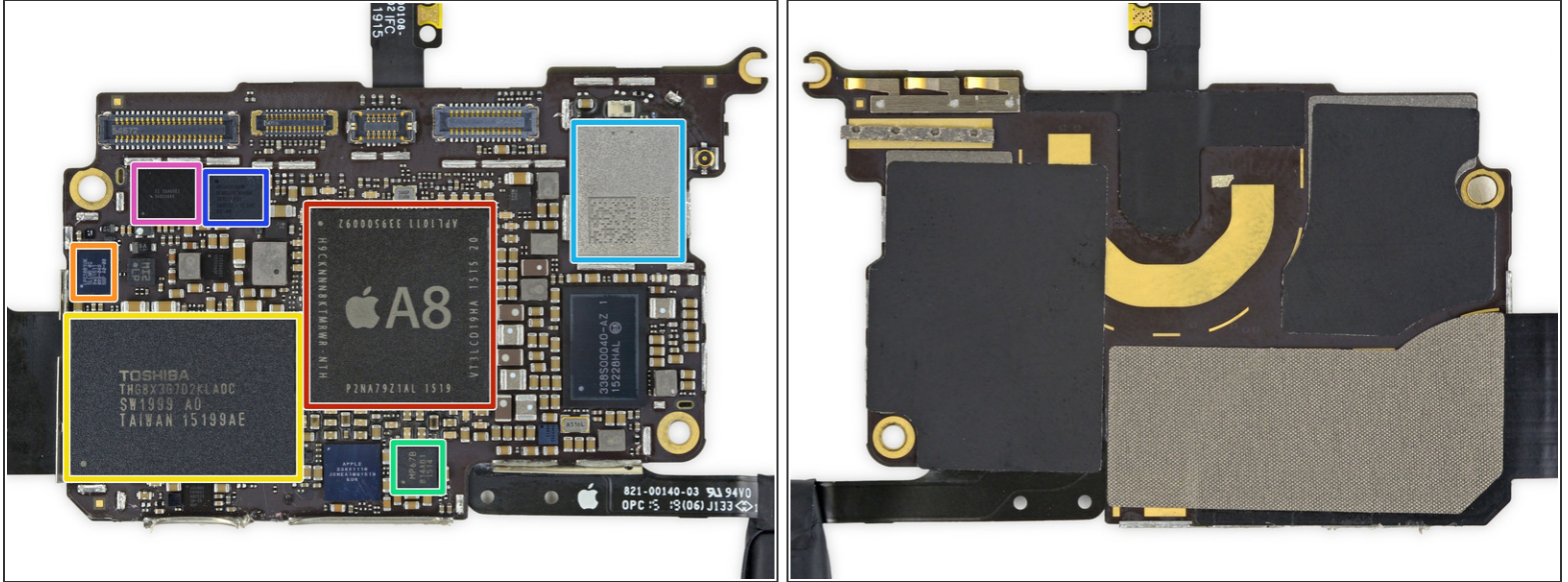
- With a gentle [flick](#) of the wrist, the rear-facing camera is free and ready to pass inspection alongside its cousin, the iPhone 6 camera...
 - For your viewing pleasure: the 8 MP iPhone 6 camera (left) and the 8MP iPod Touch camera (right).
 - Physical size serves as a pretty accurate indicator of relative quality. Despite the equal pixel count, the Touch's camera lacks some of its [cousin's](#) finer features, such as the sapphire crystal lens cover and auto image stabilization.
 - The Touch's $f/2.4$ aperture also falls short of the 6's $f/2.2$.
- i** File away this X-ray image of the iPod's primary camera. If [rumors](#) can be believed, the next iPhone may far outshine the sensor seen here.

Step 10



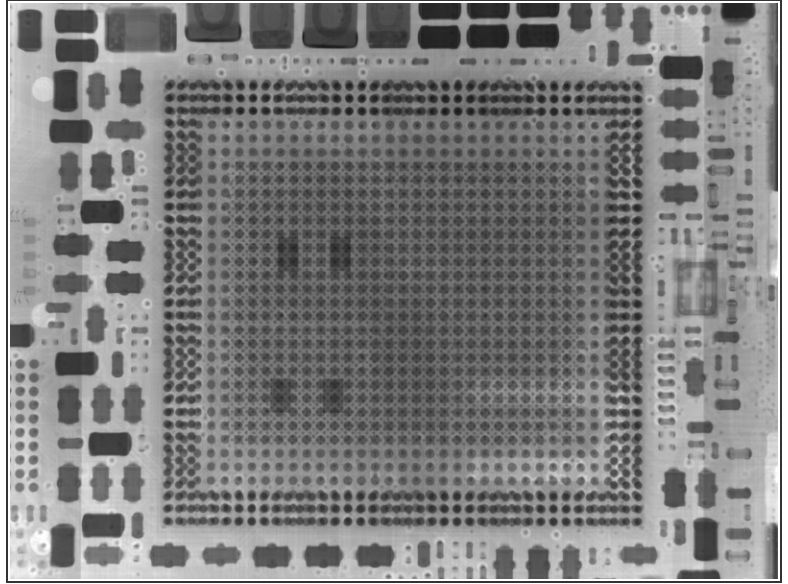
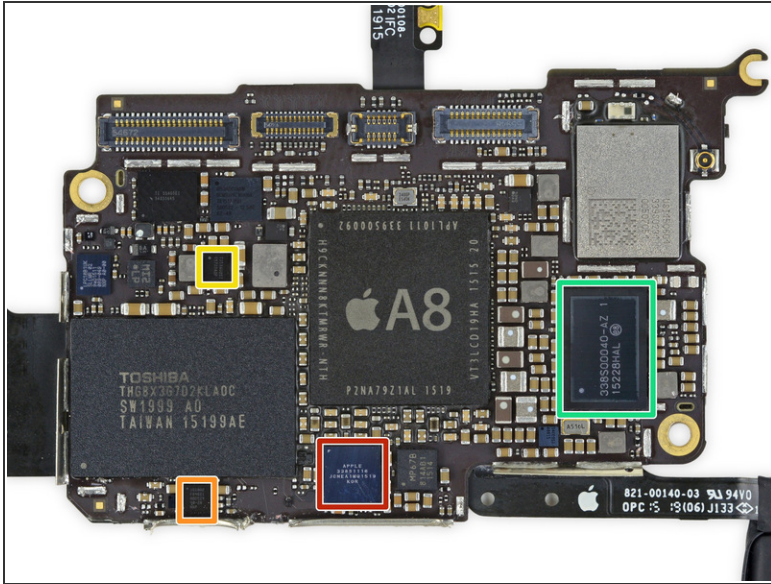
- Turning our attention to the "everything else" assembly, we quickly set to work on liberating the front-facing camera, and find ourselves facing a tangle of display cables. It's a good thing our teardown engineer has [the touch](#) it takes to handle this messy bundle.
- With some deft tweezing, we are able to extract the front panel.
- The display is almost the same as previous Touches, but hey, it has a white bezel now!

Step 11



- Let's *touch* some of these chips, shall we? This logic board is packing:
 - Apple A8 APL1011 SoC + SK Hynix RAM H9CKNNN8KTMRWR-NTH 1 GB LPDDR3 RAM (Same as iPhone 6, but [underclocked to 1.10 GHz per core](#))
 - NXP Semiconductors [LPC18B1UK](#) ARM Cortex-M3 Microcontroller (better known as the M8 Motion Coprocessor)
 - Toshiba THGBX3G7D2KLA0C 128 Gb (16 GB) NAND Flash
 - InvenSense [MP67B](#) 6-axis Gyroscope and Accelerometer
 - Universal Scientific Industrial [339S0231](#) Bluetooth/Wi-Fi Module (Probably based on Broadcom [BCM4354](#))
 - Broadcom [BCM5976](#) Touchscreen Controller
 - Texas Instruments [343S0645](#) Touchscreen Controller

Step 12



- More chips, more fun.
 - Apple [338S1116](#) Cirrus Audio Codec
 - NXP Semiconductors [1610A2](#) Display Interface Controller
 - Texas Instruments [TPS65730A0P](#) Power Management IC
 - Apple 338S00040-AZ Power Management IC (presumably a variation of the 338S1251-AZ PMIC found in the iPhone 6)
- X-ray bonus round! Let's not forget our closer look at the uber-powerful A8 processor.

Step 13



- iPod ~~turtle~~ Touch 6th Generation Repairability Score: **4 out of 10** (10 is easiest to repair)
 - While very difficult, opening the case and replacing components is not impossible.
 - The battery is adhered with pull tabs that should aid in battery replacement.
 - Many components are soldered together, requiring either a very difficult or a very expensive repair if any one part breaks.
 - There are no external screws. Instead, a combo of clips and adhesive makes it difficult to open the case.
 - Ribbon cables connected to the logic board run over the top and connect on the bottom, making it difficult to remove the board or disconnect the cables.
- And of course, a big high-five to our pals at [Creative Electron](#) for their awesome images and expertise!

To reassemble your device, follow these instructions in reverse order.

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